

When Mr. Williams came of age he inherited some money from his father, and decided to spend two or three years in travelling, for the purpose of finishing his education. He travelled, always on foot, through France, Switzerland, Italy, Greece, and on to Constantinople. He then returned to Edinburgh, and became acquainted with George Combe, with whose views on education he was in hearty sympathy; and a result of their friendship was the founding of the Williams Secular School, in which experimental science formed an important part of the curriculum.

He went to Birmingham in 1854, and at the foundation of the Birmingham and Midland Institute he was appointed master of the classes then being formed in the industrial department. In 1862 Mr. Williams invented a special retort for distilling paraffin from "cannel" coal, and in 1863 was appointed analytical chemist to Sir John Brown & Co.'s Atlas Iron Works at Sheffield; and it was during this time that he wrote his first book, entitled *The Fuel of the Sun*.

In 1872 Mr. Williams came to Norwood, and gave up his time to writing and lecturing. He gave several lectures at the Royal Institution, and three courses of Cantor Lectures on mathematical instruments, iron and steel, and chemistry of cookery, at the Society of Arts.

Mr. Williams was a large contributor to scientific and educational journals, especially under the headings of "The Chemistry of Cookery," "The Chemistry of Iron and Steel Manufacture," "The Philosophy of Clothing," "Science in Short Chapters," and "Through Norway with a Knapsack." He was elected Fellow of this Society on 1872 June 14, and of the Chemical Society on 1857 May 18. He died on 1892 November 28.

S. T. K.

ANNIBALE DE GASPARIS, foreign Associate of this Society, and formerly Director of the Royal Observatory of Capodimonte, and Professor of Astronomy of the Royal University of Naples, died on 1892 March 21.

Born in Bugnara, in the Province of Aquila, 1819 November 9 (his father being parish doctor of this small village), A. de Gasparis made his first studies at the seminary of Chieti, and there became familiar with the classic writers for whom he ever after manifested a great love and predilection.

In 1838 he came to Naples to study mathematics, of which he had already taught himself the elements. For a time he was a student at the school of engineering, but previous to completing his engineering course he became possessed of a passion for astronomy, and asked and obtained the permission of Capocci to be admitted as a pupil of the Royal Observatory of Capodimonte. He there soon became distinguished for his love of science, and his rare aptitude for observation and diligent calculation. Notwithstanding his exceptional gifts he remained for

eleven years in this humble position, which was much below his capacity.

Towards the end of 1848 he began a review of the smaller stars with the Reichenbach equatoreal, and the help of the Berlin map of the heavens, in order to search for new planets. He was probably encouraged to this work by the recent discoveries of Astræa, Hebe, Iris, Flora, and Metis, which had fallen to the lot of Hencke, Hind and Graham, in a short space of time. On 1849 April 12, he discovered his first planet, Hygeia, and the following year, within an interval of a few months, two others, Parthenope and Egeria. Become famous by these discoveries, he received the gold medal of this Society and the Lalande prize from the Academy of Paris, and was appointed in 1851 Professor of Astronomy of the Royal University of Naples. At the death of Capocci, in 1862, he was appointed director of the Observatory of Capodimonte.

He continued his observations in search of new planets for several years. Besides the three already mentioned, he discovered Irene (four days after Hind), Eunomia, Psyche, Massilia, Themis, Ausonia, and Beatrix. He alternated these astronomical observations with theoretical work, both in astronomy and mathematics, publishing a long series of important memoirs. De Gasparis was of strong physique, and worked hard, interrupting his observations only by brief readings of the classics in which he so much delighted.

About 1885, he began to suffer from creeping paralysis, which gradually became aggravated, and in 1889 the condition of his health was such as to render the fulfilment of his many official duties impossible. He therefore established himself in a country house not far distant from the observatory where he had worked for about forty-five years.

Many honours were bestowed on him; he became a member of the Academy of Italy, as well as of several foreign societies; and he was a senator of the kingdom from 1861.

He was elected a Foreign Associate of this Society 1850 December 13.

AMÉDÉE ERNEST BARTHÉLEMY MOUCHEZ was born in Madrid on 1821 August 24, was educated in Paris and Versailles, and at the age of sixteen entered the Naval School at Brest. He was gazetted midshipman in 1839, lieutenant in 1845, and captain in 1861. The most important event in his naval career was his splendid defence of Havre during the Franco-Prussian War. This side of his life is so little known to those familiar with his career as an astronomer, that a few sentences in relation to it are perhaps not out of place here. "Le capitaine de vaisseau Mouchez fut nommé par le Gouvernement de la Défense nationale, le 18 octobre 1870, commandant des forces de terre et de mer de la place du Havre, ville presque ouverte, que défendaient à peine quelques forts détachés. . . . Il entreprit de